REPORT

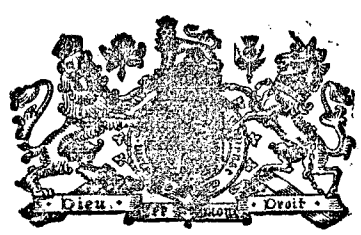
ON THE

Aligarh Agricultural Station

OF THE

UNITED PROVINCES OF AGRA AND OUDH.

FOR THE YEAR ENDING JUNE 30th, 1909.



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No. $\frac{140}{A\text{-}41}$ of 1909.

From

W. H. MORELAND, Esq., C.I.E., I.C.S.,

Director of Land Records and Agriculture,

United Provinces,

To

The CHIEF SECRETARY to GOVERNMENT,

United Provinces,

Dated Aligarh, the 1st September 1909.

Sir,

I have the honour to submit the report on the Aligarh Agricultural Station for the year ending 30th June 1909. The report has been written by Dr. A. E. Parr, Deputy Director of Agriculture, Western Circle, United Provinces.

I have the honour to be,

Sir,

Your most obedient servant,

W. H. MORELAND,

Director.

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Report on the Aligarh Agricultural Station for the year ending 30th June 1909.

CHAPTER I.

(*a*) OBJECTS OF THE STATION.

ALIGARH was originally selected as a suitable centre for the introduction of a better stapled cotton and for the supply of seed from selected plants.

Attention is also being given to the improvement of country cotton by careful plant to plant selection.

The station also serves as a centre for supplying assistance to landholders and cultivators but its activities in this direction are dealt with in the departmental report.

(*b*) SOIL.

The soil is a light reddish loam typical of the surrounding district. The Koil distributary of the Upper Ganges canal supplies water for irrigation.

CHAPTER II.

EXPERIMENTS WITH ACCLIMATIZED AMERICAN AND DESI COTTON.

EXPERIMENT I.—*Early sowing V. Sowing with the rains.*

(*a*) **American cotton.**—Two plots of as near as possible, uniform quality were selected. Watagodu variety of American cotton was sown with irrigation in one plot on the 23rd May and with the rains in the other plot on the 22nd June. Each plot was ·32 acres in size.

The results given below show a much larger yield was obtained from the early sown plot :—

Crop and treatment.	Outturn per acre in pounds *kapas*.	Remarks.
1. Watagodu sown early with irrigation.	411	
2. Watagodu sown early with rains.	333·5	

(*b*) **Country cotton.**—Mixed country cotton was sown in two plots on the 23rd May and on the 21st June respectively.

Each plot was ·32 acres in size.

The following table gives the outturn of good kapas.

Crop and treatment.	Outturn per acre in pounds. *kapas*.	Remarks.
1. Mixed country cotton sown early with irrigation.	627	
2. Mixed country cotton sown with the rains.	832·5	

The late sown cotton did much better than the early sown. This is the first year of the experiment. The season was rather disastrous to some cottons. Conclusions from the above results would therefore be premature.

It is of interest at this point to notice the poor yield of American cotton as compared with ordinary country in the above experiments. At the Aligarh farm this was very noticeable but observations on crops grown by private individuals in other parts of the district gave opposite results.

EXPERIMENT II.—*Early ploughing* v. *late ploughing.*

One of the plots selected for the experiment was ploughed up as soon after the rabi as was convenient. It received three ploughings and levellings and was sown with Hybrid American cotton on the 19th May. The other plot was ploughed only once, namely on the 18th May, and was then sown with the same variety as the other plot.

Each plot was ·64 acres in size.

A statement of yields is given below :—

Crop and treatment.	Outturn per acre in pounds *kapas*.	Remarks.
Hybrid cotton sown in plot ploughed early	319	
Hybrid cotton sown in plot ploughed just before sowing	258·5	

The results are in favour of early and frequent ploughing.

EXPERIMENT III.—*American cotton sown after plough in rows 3 feet apart* v. *Broadcasting.*

Two plots were selected, as uniform as possible. Each plot was ·64 acres in area. One was sown with farm variety No. 1 after the plough, in rows 3 feet apart.

The plants were afterwards thinned out to leave the plants 3 feet apart in each row.

The seed of the same variety was broadcasted in the other plot and the plants were thinned out, as far as possible, to leave no odd blanks or crowded areas.

The following statement gives the outturn per acre in pounds :—

Corp and method of sowing.	Outturn per acre in pounds.	Remarks.
Farm variety No. 1 sown after plough in rows 3′ apart	422·5	
Farm variety No. 1 sown broadcasted ...	351·0	

The figures show an advantage in favour of sowing regularly in rows.

CHAPTER III.

PLANT SELECTION.

In 1908 the seed from the retained selected plants was sown on one-tenth acre plots.

The produce of each kind was harvested and ginned separately.

The percentages of *rui* and seed were then estimated.

The attached table shows the results obtained.

The details concerning yield and ginning percentages of Tehaiya (yellow flowered) and Bakand (white flowered) types of country cotton are included in the table.

Only two American types have been selected for sowing in 1909-10, viz.—

Plant No. 16, on account of high percentage of *rui* and plant No. 21 because of its high yield as compared with the others.

All the country kinds are being sown in 1909-10.

Name.	Area on which grown (in acres)	Yield of good kapas per acre in pounds.	Ginning results percentage of *rui*.	Remarks.
American cotton plant No. 1	$\frac{1}{5}$	323	32·82	
„ „ 9	$\frac{1}{5}$	223	32·75	
„ „ 11	$\frac{1}{5}$	248	30·62	
„ „ 13	$\frac{1}{5}$	219	31·36	
„ „ 16	$\frac{1}{2}$	261	35·27	Retained for sowing in 1909-10.
„ „ 19	$\frac{1}{5}$	219	28·72	
„ „ 21	$\frac{1}{5}$	535	32·64	Ditto.
„ „ 25	$\frac{1}{5}$	371	28·28	
„ „ 26	$\frac{1}{5}$	214	31·52	
„ „ 30	$\frac{1}{10}$	251	29·57	
„ „ 31	$\frac{1}{10}$	345	32·13	
„ „ $\frac{570}{1}$	$\frac{1}{5}$	276	30·17	
„ „ $\frac{610}{1}$	$\frac{1}{5}$	216	26·69	
„ „ $\frac{610}{2}$	$\frac{1}{10}$	156	29·20	
Hayman's Fuzless medium staple.	$\frac{1}{10}$	219	32·11	Retained as the best of the (Fuzless) kind.
Country cotton plant No. 27...	$\frac{1}{10}$	643	36·11	Retained for sowing in 1909-10 and for distribution to selected cultivators.
„ White Flower...	$\frac{1}{10}$	466	42·04	
„ Yellow Flower...	$\frac{1}{10}$	309	32·92	

New Selections.

From an area of about 12 acres 156 plants were selected as being above the average. Their produce was harvested separately. A rough examination resulted in 98 being discarded.

The remaining 58 were carefully examined as regards outturn, percentage of *rui*, length of fibre, colour, softness, strength of fibre, and the absence of short stuff.

Twelve plants were finally selected to grow in 1909-10.

Details are given in the table below :—

Plant number.	Weight of kapas in grains.	Percentage of lint.	Length of lint in inches.
American 1*a* ...	5,369	33·619	1 to $\frac{11}{10}$
„ 1*b* ...	2,907·75	43·234	$\frac{8}{10}$ to 1
„ 16*a* ...	2,001·375	42·122	$\frac{8}{10}$ to $\frac{9}{10}$
„ 16*b* ...	1,527·375	43·817	$\frac{7}{10}$ to 1
„ $\frac{57C}{4}a$ ...	3,554·625	42·758	$\frac{6}{10}$ to $\frac{8}{10}$
„ $\frac{57C}{5}a$ ...	3,027·125	44·679	$\frac{8}{10}$ to 1
„ $\frac{62C}{2}a$ ...	1,318·125	36·453	$\frac{9}{10}$ to $\frac{11}{10}$
„ 32 ...	2,773·875	41·107	$\frac{6}{10}$ to $\frac{8}{10}$
„ 33 ...	3,335·875	38·524	$\frac{9}{10}$ to 1
„ 34 ...	2,684·625	43·538	$\frac{7}{10}$ to $\frac{8}{10}$
Country 27*a* ...	924·0	51·136	$\frac{6}{10}$ to $\frac{7}{10}$
„ 27*b* ...	802·25	53·116	$\frac{7}{10}$ to $\frac{8}{10}$

CHAPTER IV.

MISCELLANEOUS.

(a) Indigo.

Investigations as to the best time for sowing Java-Natal indigo were taken up.

The crop was sown at various intervals during the year, and observations were made on these plots, and also on Java-Natal indigo grown privately in the Bulandshahr district.

The conclusions arrived at are, that there are two distinct times for sowing in this part of the United Provinces—

(1) Immediately after the rabi crops are removed.

(2) At the commencement of the rains.

If sown at the end of the rabi season with irrigation, the crop grows well and one cutting may be expected at the end of the monsoon. The crop may then be ploughed up or it may be left for the next season when two cuttings may be obtained.

If sown in the rains a cutting will not be probable that year, but the next year two may be expected.

If sown as a rabi crop in October or November it is liable to be killed out entirely by frost whereas the crop sown in June, July or August gets well established. The frost will in the latter case, often blacken and kill the part above ground but it does not seriously damage the underground parts, apparently, as new shoots are sent out when the cold wheather is over.

(b) Oats.

A few varieties of English and Canadian oats were sown. They were a complete failure. They stood in the field till May before ripening and produced scarcely any grain.

(c) Gursikran usar.

(1) **Sowing fruit trees.**—Fifty-four holes were bored with a 12″ auger and filled up with good soil. On the 20th July 1908 seed of one of the following

trees was sown in each hole, viz., mangoe, mahua jamun, tamarind, bel and chounkra (Prosopes spicigera) at present the tamarind are the most flourishing.

(2) The expriments with Australian salt bushes and those concerned with reh scraping, and the application of gypsum and lime where maintained through the year.

ALIGARH :
28*th June* 1909.

A. E. PARR,
Deputy Director of Agriculture,
Western Circle, United Provinces.

APPENDICES.

APPENDIX A.

Character of the season and rainfall.

The monsoon opened on the 19th June, and the falls of the following days allowed ploughing to commence. There was almost continuous rain from the 8th July to 2nd September when it stopped altogether. The total rainfall at the farm during this period was 34·92 inches. This is above the normal but its distribution was defective. It proved a little too much for cotton in its early stages and later on in September the crop suffered from drought where irrigation was not possible. The early closing of the rains left insufficient moisture for the rabi seed bed in many cases and artificial irrigation had to be resorted to. Rain in April damaged the crops on the threshing floor. Advantage was taken of the few five hours each day to open out the crops and get them dry again. In this way the damage was much reduced. None of the wheat was spoiled but some of it was rendered unfit for sowing and was sold at once for food.

A small quantity of gram germinated on the threshing floor and was thus rendered useless. This was being threshed out when the rain commenced and it germinated very quickly, apparently, because of its close contact with the ground.

Rainfall recorded at the Government Agricultural Station, Aligarh, from 1st of June 1908 to 31st of May 1909.

Month and date.		Rainfall.	Total per month.
June 1908 ...	5th	Drizzling	
	19th	·04	
	20th	1·54	
	22nd	·09	
	30th	3·08	4·75
July 1908 ...	2nd	·19	
	8th	·06	
	9th	·06	
	10th	·23	
	11th	·71	
	14th	·58	
	15th	·33	
	16th	2·63	
	17th	2·64	
	21st	·22	
	23rd	·38	
	24th	·13	
	25th	1·15	
	26th	·22	
	28th	·04	
	29th	·01	9·61
August 1908 ...	1st	7·60	
	2nd	1·19	
	3rd	·08	
	6th	·09	
	7th	·11	
	8th	·50	
	9th	·08	
	10th	·44	
	11th	·75	
	14th	·94	
	15th	·07	
	16th	·43	
	18th	·18	
	19th	·22	
	20th	1·36	
	21st	·60	
August 1908 ...	23rd	·08	
	25th	1·25	
	26th	2·17	
	27th	·32	
	28th	·76	
	29th	·32	
	30th	·15	
	31st	·51	20·20
September 1908...	1st	·21	
	2nd	·15	·36
December 1908 ...	25th	·02	·02
January 1909 ...	11th	·60	
	13th	·30	
	20th	·04	
	27th	·06	
	28th	·20	1·20
February 1909 ...	3rd	·03	
	23rd	·08	
	24th	·15	·26
April 1909 ...	19th	·22	
	20th	·74	
	21st	1·16	
	22nd	·09	
	23rd	·27	
	26th	·24	
	27th	·60	3·32
		Total...	39·72

APPENDIX B.

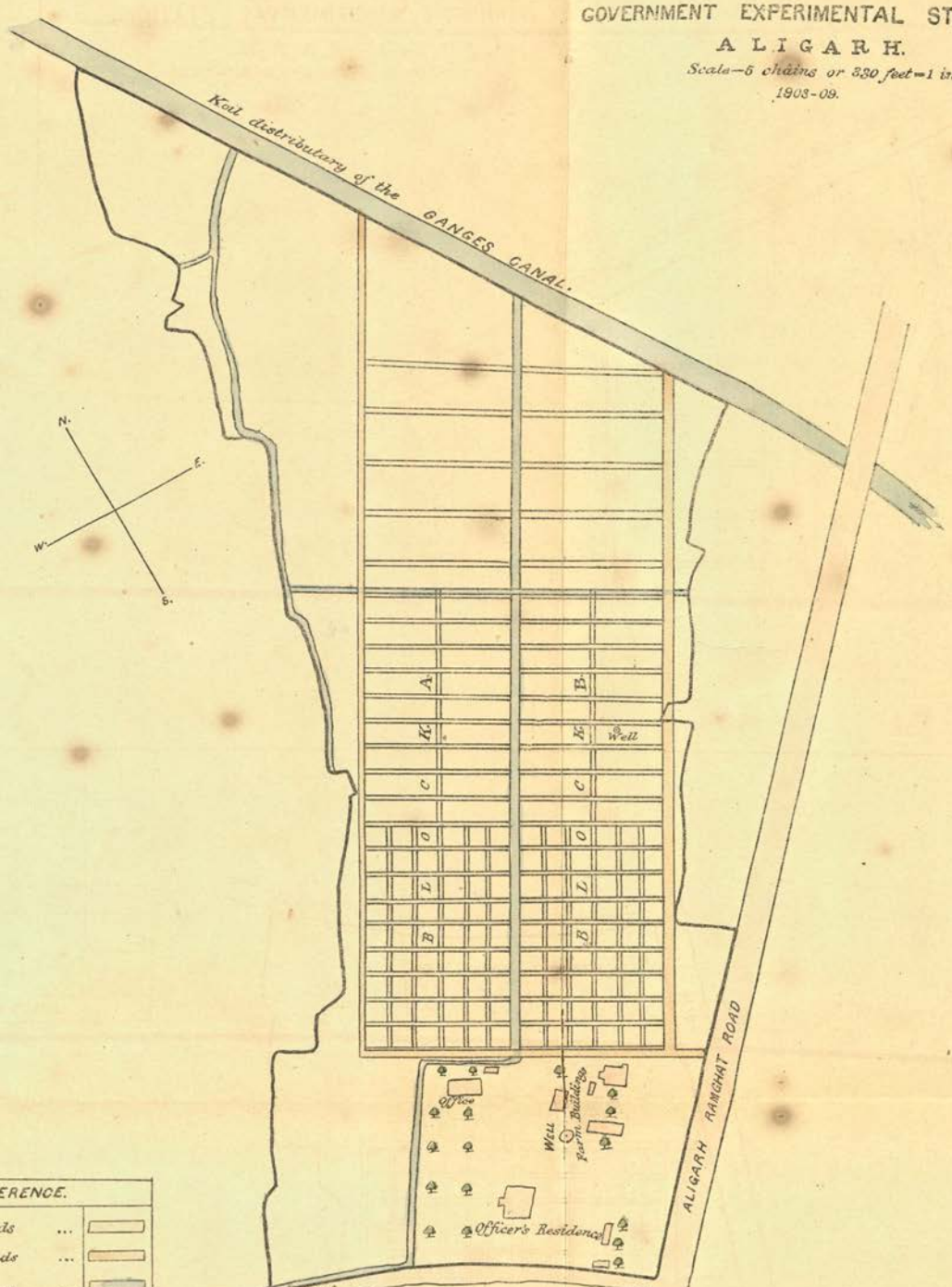
SITE MAP

OF THE

GOVERNMENT EXPERIMENTAL STATION, ALIGARH.

Scale—5 chains or 330 feet=1 inch.

1908-09.



REFERENCE.

Pucca roads ...	
Kutcha roads ...	
Canal	
Buildings	
Trees	
Boundary	
Roads between plots...	
Water courses ...	

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